



Pinellas Environmental Restoration Project

Northeast Site Non-Aqueous Phase Liquids Interim Measure Progress Report October through December 2004

January 2005



Office of Legacy Management

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Interim Measures Progress Report**

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Work Performed by S.M. Stoller Corporation under DOE Contract No. DE-AC01-02GJ79491
for the U.S. Department of Energy Office of Legacy Management, Grand Junction, Colorado

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1.0 Introduction

This quarterly report for the in-situ thermal remediation of non-aqueous phase liquids (NAPL) at the Northeast Site covers the period of October through December 2004. Previous reports provided background information for the site, a description of the remediation process, an overview of construction and operation activities for NAPL Area A, a description of the final activities for the Area A remediation system, including demobilization, confirmatory sampling, and the final report. Additionally, recent quarterly reports contained a description of planning and initial activities for the construction of a similar treatment system at NAPL Area B.

The subcontract for Area B NAPL remediation was awarded to the team of WRS Infrastructure and Environment, Inc., McMillan-McGee Corporation, and PPM Consultants, Inc. in late February 2004. The subcontractor completed the final conceptual design for Area B NAPL remediation in early April, and this was submitted to Florida Department of Environmental Protection (FDEP) in mid-April 2004 as the *Addendum to the Interim Measures Work Plan for Remediation of Non-Aqueous Phase Liquids at the Northeast Site (Area B Conceptual Design)* (DOE 2004). FDEP approval of this document was received in June 2004. Final design drawings were submitted to FDEP at the end of June 2004. Construction activities began in early July 2004.

Activities during this current quarter consisted mainly of the continuation and completion of drilling activities for extraction well and electrode installation.

2.0 Summary of Activities

Installation of extraction wells, electrodes, and temperature and pressure monitors ([Figure 1](#), [Photo 1](#), and [Photo 2](#)) began in August and was completed at the end of November. This includes the installation of the slant electrodes and the horizontal extraction wells under Building 1400. In total, 176 borings were installed. All drilling work was accomplished with no health and safety incidents. The estimated total wastewater produced by drilling activities is 87,000 gallons; total drill cuttings and solids shipped exceeded 400 cubic yards. The water was treated through the Building 100 Treatment System, and the solids were disposed of off site at an appropriate waste disposal facility. Construction progress review meetings were held in October and December.

Additionally, the subcontractor continued fabrication of wellheads and above-ground piping. The subcontractor also began procurement of the above-ground vapor/water treatment system components.

Work concerning the various permitting aspects of the NAPL Area B remediation continued during this quarter. The application for a non-Title V Air Emissions Permit was submitted to FDEP in early June. The application provides information concerning the suspension of the existing air permit at the Northeast Site and construction and operation of a new air emissions system required for the treatment of liquid and vapor phases associated with NAPL Area B remediation. The final permit was issued in December 2004.

In addition to the work for NAPL Area B, six new monitoring wells (0573–0578) were installed in the interior of the former NAPL Area A in May and June 2004 ([Figure 2](#)). These wells were

installed to allow monitoring inside the former NAPL remediation area for potential future remediation, if necessary. Additionally, these wells allow monitoring for potential rebound in contaminant concentrations more than a year after completion of NAPL remediation in this area. These wells were installed as three pairs (deep and shallow) at each location. The results from the July and October 2004 sampling events are shown in [Table 1](#), as well as the most recent data from the eight peripheral wells (0560–0567). These data demonstrate that concentrations remain low both inside and around the periphery of the former NAPL area. Ground water temperatures from the six interior wells ranged from 93 to 111 ° Fahrenheit, indicating that the subsurface remains at a slightly elevated temperature 20 months after active heating ceased.

3.0 Deviations

No deviations were encountered during this quarter.

4.0 Problems

No problems were encountered during this quarter.

5.0 Upcoming Activities

Activities for the next quarter, January through March 2005, consist of the following. Piping and wellhead fabrication and treatment system component procurement will be completed by the end of January. Treatment system construction and installation of wellheads and piping will begin in early March and continue into the following quarter. The start of system operations is scheduled for August 2005, with operations continuing until March 2006.

6.0 References

U.S. Department of Energy, 2004. *Addendum to the Interim Measures Work Plan for Remediation of Non-Aqueous Phase Liquids at the Northeast Site (Area B Conceptual Design)*, DOE-LM/GJ635-2004, Document Number N0075500, April.



Photo 1. Installation of Electrodes and Extraction Wells Through the Vapor Cap, View Looking Northeast



Photo 2. Installation of Electrodes and Extraction Wells Through the Vapor Cap, View Looking Southwest

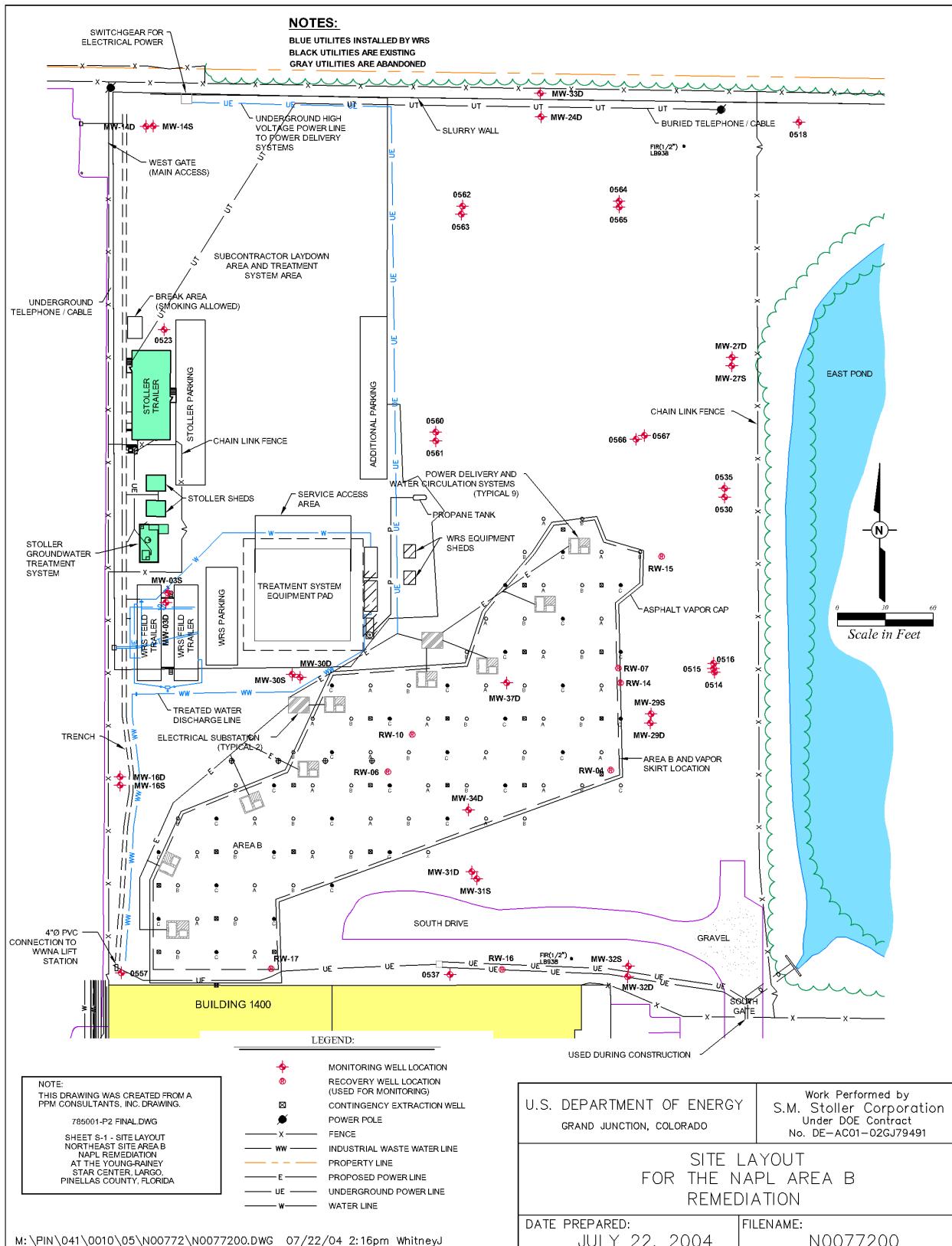


Figure 1. Location of New Infrastructure and NAPL Area B Remediation System Layout

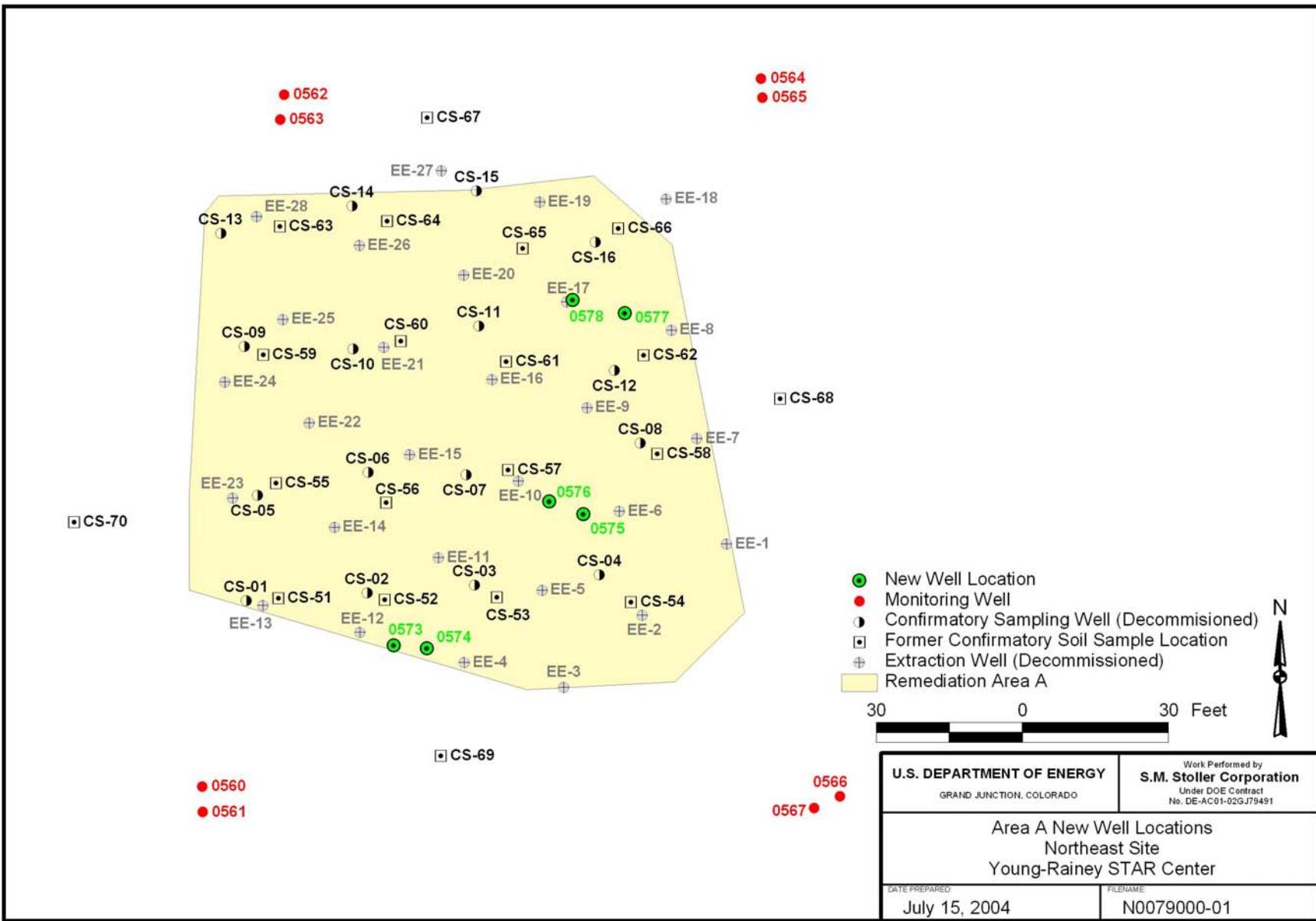


Figure 2. Location of New Monitoring Wells at Former NAPL Area A

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Table 1. Results From the July and October 2004 Sampling of the Six New Monitoring Wells in Former NAPL Area A, Plus Recent Data From the Eight Peripheral Wells. The eight peripheral wells were not sampled in July 2004. The petroleum hydrocarbons data listed as being collected in July 2004 were actually collected in August 2004. All concentrations are in µg/L.

Well	Date	TCE	cis-1,2-DCE	Methylene chloride	Toluene	Petroleum Hydrocarbons ^a
Interior Wells						
0573	7/13/2004	2.5 U	63.3	5 U	2.5 U	2,170
	10/11/2004	0.5 U	12.6	1 U	1.2	1,760
0574	7/13/2004	6.6	351	5 U	2.5 U	640
	10/7/2004	35.4	330	1 U	0.81 J	619
0575	7/23/2004	0.5 U	1.5	1 U	4.5	7,210
	10/11/2004	0.5 U	4.4	1 U	1.9	4,610
0576	7/23/2004	0.5 U	3	1 U	0.6 J	1,030
	10/7/2004	0.5 U	14.1	1 U	0.5 U	859
0577	7/23/2004	0.5 U	0.5 U	1 U	394	5,890
	10/7/2004	5 U	5 U	10 U	234	2,860
0578	7/23/2004	0.5 U	5.7	1 U	1.7	2,080
	10/11/2004	0.5 U	10.2	1 U	0.91 J	1,160
Eight Peripheral Wells						
0560	10/12/2004	0.5 U	0.5 U	1 U	0.5 U	513
0561	10/12/2004	0.5 U	0.5 U	1 U	0.5 U	424
0562	10/7/2004	0.5 U	0.5 U	1 U	0.5 U	160 U
0563	10/8/2004	0.5 U	2.1	1 U	0.5 U	587
0564	10/12/2004	0.5 U	0.5 U	1 U	0.5 U	415
0565	10/12/2004	0.5 U	0.5 U	1 U	0.5 U	271
0566	10/12/2004	0.5 U	4.7	1 U	0.5 U	947
0567	10/12/2004	1.8	68	1 U	0.5 U	558
	NAPL GOAL	11,000	50,000	20,000	5,500	50,000
	MCL:	3	70	5	1,000	5,000

^aAs measured by the Florida Petroleum Range Organics method.

U = Not detected above the associated value.

J = Estimated value between the method detection limit and the reporting limit.